ON THE
SURGICAL TREATMENT
OF
SUPPURATING OVARIAN CYSTS,
AND ON
PELVIC ADHESIONS IN OVARIOTOMY.

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Two important points, connected with the operation of ovariectomy are illustrated by the following case which I will first briefly relate :

Anna W—, æt. 46, was admitted into St. George's Hospital on May 11, 1871, with a view to the operation of ovariectomy. She was a married woman and had had children ; but latterly had not been living with her husband. The catamenia had been regular up to the date of her admission. On admission she seemed in fair general health though rather pale and thin, the pulse was regular, about the normal rate ; rather weak. She complained of want of appetite. The tumour had been noticed five years before, and had then been diagnosed as ovarian, but it had caused her little inconvenience until December

last, when it became constantly painful, she suffered much from sickness, and the appetite failed. Under medical treatment the sickness was relieved, but as the tumour still increased, she was advised to undergo operation.

On examination, there was a very large tumour fluctuating very distinctly, and apparently very movable. There was no displacement of the uterus, nor could the cyst be felt from the vagina. No solid masses or secondary cysts could be felt. The disease was thought to have begun on the left side.

It was decided to tap her before operating, and this was done, for the first time in her life, on May 22nd, the occurrence of the catamenia before their proper time having prevented paracentesis being performed sooner. Fourteen pints of a very viscid fluid, of pale greenish colour, and sp. gr. 1036 were drawn off, with great immediate relief to the patient. Her appetite quite returned, so that she could eat meat with relish. Examination of the abdomen detected hardly any remains of the tumour.

Everything tending to the belief that the tumour was of a simple nature, consisting mainly of a single cyst, it was decided to operate as soon as it had sufficiently refilled.

No adverse symptoms were noticed till June 17th, up to which date the abdomen had been gradually but slowly increasing in size. On that day she complained of pain and tension in the abdomen, without sickness.

For the next few days she remained in the same condition, complaining much of pain in the belly, chiefly in the right iliac fossa; but also of tenderness to pressure in various parts of the abdomen. The pulse was rapid and very weak, she altogether lost appetite and had an objection to taking wine. Morphia was necessary to procure sleep and diffusible stimulants were ordered. The temperature was unfortunately not observed; but there were no rigors nor any indication of general fever. Sickness came on on June 20th, and continued more or less at intervals, and chiefly after food, till the date of operation. She became remarkably emaciated. The size of the abdomen increased steadily, but by no means rapidly. The

pulse ranged about 100. Its chief character was extreme weakness, so that it was often very difficult to count it, and there was a thrill to be felt in all the large arteries of the body. A very small quantity of albumen was occasionally found in the urine. The pain in the abdomen was not constant, nor was the tenderness on pressure always complained of, though she generally felt it in the right iliac fossa. The tongue was always clean. Fluctuation was quite perceptible in the cyst, as before.

I was doubtful of the reason of this condition. The pain, especially in the right iliac fossa, made me think that low peritonitis had followed the tapping; still the absence of any general fever, and the late occurrence of sickness (from which it is to be remarked she had suffered before any treatment had been commenced), did not indicate the existence of any serious inflammation of the peritoneum. But her alarming weakness and emaciation appeared to contra-indicate any operation, so after consultation with Dr. J. Clarke and my other colleagues, who were all of that opinion, it was decided to send her down to our branch hospital at Wimbledon, and to operate there if she should recover sufficiently.

She left St. George's Hospital on June 28th, being then somewhat better and stronger, but essentially in the same condition.

On July 18th, I saw her at Wimbledon. She had improved in general health; did not keep her bed, and had a better colour. The abdomen was much larger, the tumour still moving freely from side to side. The feet were a little swollen towards evening. The pulse remained of the same weak, rapid, thrilling character. Mr. Gregory Smith reported that the urine again contained a little albumen.

In August I again saw her with a view to operate before leaving town for a summer tour, but as she was still excessively weak, and the tumour had increased only very slightly, it was decided to put it off till my return to London in October.

Accordingly on October 28th, as she seemed to have improved as much as she was likely to do, ovariectomy was performed. She had certainly gained flesh since her arrival

at Wimbledon, though her emaciation was still extreme ; but her pulse was not much improved, in fact, just before the operation, I could hardly count it. However she was herself anxious to have the operation performed, and looked forward confidently to recovery.

Mr. Haward administered ether. An incision was made about six inches in length, and was extended up to the umbilicus as it was found necessary. The omentum was found in front and closely adherent to the tumour, and presenting very large vessels which ran across the wound. Two silk ligatures were tied on this portion of the omentum, and it was divided between them. The cyst was now with great difficulty separated from the abdominal wall in front, to which it was closely adherent in all parts. Then the cyst was tapped ; the fluid which first ran out seemed to resemble that evacuated by tapping ; but soon purulent fluid was seen to be issuing, and then pure pus in very large quantity. The whole amount of fluid was not less than a gallon and a half, and of this it was estimated that about one half was pus. Having diminished the bulk of the cyst and ascertained that its upper part was free, I proceeded to separate the right and lower part from the omentum, to which it was most intimately united, so that I had to peel a small part of the outside of the cyst off in detaching it ; another ligature had to be applied to the stalk of the omentum. Imbedded in the omentum was a hard body in shape and size something like the uterus, but perfectly movable, and probably only a piece of thickened omentum. The tumour adhered behind to the small intestines for some inches. After separating all these adhesions, during which much care was required on the part of Mr. Pollock and Mr. Pick, who assisted me, to prevent the escape of any of the pus into the abdomen, I tried to deliver the cyst : but I found the lower portion of it so intimately united to the circumference of the brim of the pelvis on the left side, that to have torn away those adhesions would obviously have involved the greatest risk to the iliac vessels and bladder. Accordingly the remains of the cyst were pulled out as far as could be done, the intestines returned into the belly, and

the lower portion of the cyst clamped. I had by me a set of Mr. Wells's clamps, but none of them were large enough. However, a large calliper clamp (Mr. Hutchinson's) just embraced the neck of the cyst at its point of exit from the abdominal wall, and it was applied to it as firmly as possible. The wound was then united with seven or eight harelip pins, two of them being passed through the cyst below the clamp. The whole proceeding lasted three quarters of an hour; little blood was lost. She suffered nothing from sickness either during or after the operation; the ether seemed to act remarkably well.

She slept comfortably with two subcutaneous injections of gr. $\frac{1}{4}$ of acetate of morphia; and took nothing except a little ice to suck. Next morning she was free from pain, the abdomen quite flaccid; the pulse ninety-six, very weak. There was a little oozing of blood from the walls of the cyst, which were nearly half an inch thick. So I passed a strong ligature through the mass above the clamp and seared the exposed edges of the cyst well with the actual cautery. On October 30th, I removed the clamp with difficulty on account of its being so buried in the mass. She was going on well. Her pulse was 96, stronger, tongue clean, no sickness. She had passed water naturally and had taken a little fluid nourishment, with a small quantity of wine.

On the following day the bowels were open without medicine, there was a little sickness after food; the sloughing stump was covered with a charcoal poultice.

On November 1st I removed all the harelip pins and supported the wound with strapping. One of the pins passing through the remains of the cyst required some force for its removal; a quantity of very foetid oily looking serum followed it. The symptoms remained much the same. The belly was slightly swollen, but not tender. The upper part of the wound had united kindly.

Next day, the tympanitis had increased, causing the sloughing stump to recede, as it were, into the bottom of a deep pit formed by the abdominal parietes. She suffered for a few days from sickness after food, especially if she tried to take

anything solid; but this sickness seemed due to the offensive smell from the sloughing cyst, as it subsided when this had come away. This process occupied about a fortnight. The tracks of the two lowest harelip pins also sloughed. The ligatures came away about November 7th, and from this time the wound began to granulate healthily and contract.

When seen on November 19th she was still in bed, but quite convalescent, the pulse much improved in power and volume; the aspect far more healthy, the appetite quite good, and she seemed to be rather less emaciated. On examining the wound there was still seen a deep pit from the bottom of which a rather copious discharge of pus welled up; but this did not appear to come from the inside of the abdomen, for pressure in either iliac fossa did not increase it, and discovered no remains of the tumour.

She left her bed on November 27th, being convalescent in all respects except that the wound, though much contracted, had not healed.

Soon after this she returned home. When seen on January 19th 1872, the wound appeared soundly healed. No tumour could be detected in either iliac fossa, nor from the vagina. She had regained her flesh and strength and was in perfect health in every respect.

Remarks.—Suppuration in the interior of an ovarian cyst appears not to be a very uncommon event, but it has hitherto received little attention from surgeons, nor does it seem at present at all settled whether chronic suppuration can be accurately diagnosed, and, if so, what its value would be as an indication for practice.

The internal inflammation which leads to suppuration will, I should suppose, usually if not always be accompanied by external peritoneal inflammation. The first question we have to decide is whether it is possible to distinguish the symptoms of suppuration from those of peritonitis. When occurring in the acute form after the operation of tapping, I believe the diagnosis may be made with moderate certainty, from the rapid refilling of the cyst, with rigors, sweats, high

temperature and general fever. But few such cases would, I imagine, afford any opportunity for surgical treatment.¹

It is more important in a surgical point of view to inquire into the symptoms and treatment of that chronic form of suppuration which is more common and more tractable than the former. On this point I do not get much information from published works. I will quote two of the most esteemed authors on ovarian diseases.

Boinet (*'Traité pratique des Maladies des Ovaires'*) makes repeated mention of the occurrence of suppuration in ovarian cysts, as in the following passage:—"Sometimes as the result of a spontaneous process, at others as the consequence of surgical proceedings, the cyst is found full of pus, which in some cases is creamy and of good composition, but more frequently serous, viscid, sanious, mixed with blood or with grumous matter, or coagula more or less altered (p. 114; see also pp. 81—96), and he relates (p. 102) an interesting case in which a dermoid cyst of the ovary, in a girl aged 20, suppurated after paracentesis. The case was treated by repeated iodine injections with benefit, but the suppuration persisted during several years of treatment, being, perhaps, kept up by the hairs and other matters contained in the cyst. In this case M. Boinet merely says that the occurrence of suppuration was preceded by several "signs of inflammation," nor in any passage, as far as I have seen, does he specify exactly any symptoms as peculiar to suppuration.

Sir J. Simpson speaks thus on the subject:—"Pus is very often a result of inflammation of an ovarian cyst, more particularly if the inflammation has been subacute rather than acute in its type. The purulent matter is usually not seen on tapping or dissection till the very lowest part of the cyst is emptied." (Works, edited by Dr. Watt Black, vol. i, p. 777). "It is rarely that you find inflammation taking place in the interior of an ovarian cyst until some operation has been undertaken for

¹ One very interesting example, however, of successful ovariectomy in a case of acute suppuration has just been recorded by Mr. Spencer Wells in a lecture in the *'Med. Times and Gazette,'* which I read since writing the above.

the cure of the disease. Yet even in cysts which are tapped for the first time we sometimes find the fluid that escapes turbid from the admixture of matters evidently of inflammatory origin ; and if the patient's history be inquired into we can usually make out that at one period or another, from the time when she first noticed the tumour, she had occasional shiverings and pain in the abdomen, and that sometimes also she had suffered from profuse perspirations. Most frequently all symptoms of inflammation occurring in the interior of an unruptured and unopened cyst pass unnoticed, and when patients come to you with cystic ovarian tumours, complaining of pain and other symptoms of inflammation in the tumour, you will usually be justified in concluding that the morbid process is taking place, not in the interior of any cyst, but on the external peritoneal surface of the growth." ('Clinical Lectures,' Philadelphia, 1863, p. 40.)

In a letter which Mr. Spencer Wells has been so kind as to write me on this subject he mentioned that he has removed suppurating cysts occasionally, and two such cases are shortly referred to in his papers in the 'Transactions' of this Society, vol. 1, p. 546 (No. 159, died in twenty-five hours from pyæmic fever), and p. 548 (No. 5, cyst partially removed ; died fourteen hours ; exhaustion).

Mr. Wells says further that the symptoms of this state of things are "pretty clear, the most important being high temperature. It often rises at night to 104° or 105°, and is seldom below 100° in the morning ; pulse rapid and feeble ; skin hot and dry ; urine scanty, often containing albumen ; tongue dry and brown ; with rapid emaciation. The physical signs are those of fluid alone or of a mixture of air and fluid in the cyst."¹

I much regret that the thermometer was not used in the

¹ In a case of spontaneous suppuration related by Mr. Bryant (*loc. infra cit.*), he gives the symptoms of suppuration thus : "Anything like pressure upon it (the tumour) caused pain, and even the gentlest manipulation distress. The general appearance of the woman was very unsatisfactory. Her complexion was sallow and unhealthy ; skin hot, and at times bathed in perspiration ;

case I have related, but the heat and dryness of the skin was certainly not present, nor was the tongue of the character described by Mr. Wells. In fact, the patient was so free from any indication of general fever that it never occurred to me to take thermometrical observations, nor is it likely that a very elevated temperature could have coexisted with symptoms otherwise so ill-defined. The sickness which came on shortly after the abdominal pain and tenderness was of no value as a diagnostic sign, since equally troublesome sickness existed before the tumour had been meddled with in any way, and when the fluid was certainly not purulent. No rigors were observed at the time, and on questioning the patient afterwards she said she had never had any.

There remains the rapid and extreme emaciation combined with a peculiarly feeble pulse. It is difficult to convey in words an idea of the strange oppressed pulse in this patient; it really seems to me that this emaciation and this peculiar pulse were the only general symptoms which ought to have attracted our observation and on which a diagnosis could in future be founded. But I would also call attention to the fact of the patient having complained of acute tenderness when the cyst was pressed upon in various parts. We were rather inclined to doubt the reality of this tenderness, and to believe that it was merely nervous, so little did she seem to suffer in other respects and so various were the parts in which it was manifested, but it constantly excited notice, and, to me, rather added to the obscurity of the case.

Looking back on the matter with the information derived from the operation, I think I might say that in another case in which this general tenderness to pressure coincided with symptoms of low peritonitis, with rapid emaciation otherwise unaccounted for, and with a very feeble and somewhat rapid pulse, I should be disposed to conjecture the occurrence of chronic suppuration within the cyst, and that this conjecture would be confirmed if the rise of temperature mentioned by

pulse 120, small, feeble, and rapid; tongue furred; appetite bad. Upon the whole it appeared as if the tumour was undergoing some degenerative change; consequently ovariectomy was postponed."

Mr. Wells were observed. Under such circumstances the temperature should, no doubt, be carefully noted.

Allowing that suppuration, whether acute or chronic, is diagnosed, what is the surgical indication? The only place in which I have as yet seen this question specifically discussed is in an interesting paper by Mr. Bryant, in the 'Guy's Hospital Reports' for 1868 (3rd series, vol. xiv), where two cases of chronic suppuration of ovarian cysts are related. In one of these Mr. Bryant laid open the cyst through a free abdominal incision. Seven or eight pints of purulent fluid with broken-up tissue were let out and the cyst carefully secured to the abdominal wall. The patient ultimately recovered, but with a sinus which continued to discharge for the period she was under observation—more than two years. In the second case another operator attempted to perform ovariectomy, but without success, on account of the extensive adhesions. "The fluid portion of the tumour was drawn off, the septa broken down, and the wound closed. In this instance most formidable complications ensued from the bursting of the pus through the wound, whereby the abdominal cavity was laid open by two apertures, each the size of half-a-crown, through each of which folds of intestine could be seen covered with adhesions, and a considerable quantity of matter was pressed up from amongst the intestines several times a day." Notwithstanding all this, the patient recovered, the wound healed completely, and she was known to be quite well four years after the operation. Mr. Bryant, however, severely blames the attempt to perform ovariectomy in this case; indeed, the obvious inference from his paper is that he regards suppurating ovarian cysts as best treated by the practice which he followed in the first case, if, indeed, it be not the only justifiable measure. On the other hand, in a most interesting lecture by Mr. Spencer Wells in the 'Medical Times and Gazette,' January 27th, 1872, he relates three cases in which suppurating cysts have been removed with the greatest advantage to the patient, and I cannot doubt that the best course to pursue is at least to attempt the operation. The question of opening the cyst freely and attaching

it to the abdominal wall in case the adhesions are found invincible must be kept before the surgeon's mind.

Another interesting question in ovariectomy, illustrated by this case, is how to manage cysts which are so adherent in the pelvis that they cannot be pulled out without too much danger. In this instance any persistent attempt to have dissected, or torn the mass away from the pelvic outlet would probably have ended in laceration of the ureters or great veins, and might after all have been futile. The alternatives are to pull the cyst as far as possible out of the abdomen and apply a clamp to its neck; or, to apply a clamp temporarily, cut away the cyst, sear the cut edges with the cautery and return the mass into the abdomen; or instead of the cautery to use ligatures for the purpose of restraining hæmorrhage from the cut edges of the cyst; or finally to stitch the edges of the cyst to the wound in the abdomen and leave the cavity of the cyst exposed.

I have no doubt of the superiority of the first method, when it is practicable, that is, when the neck of the cyst is thin enough to be embraced in the clamp. The internal surface of the cyst is thus brought into contact and may adhere and obliterate the cavity, as seems to have occurred in our patient. If this does not take place, at any rate the resulting inflammation, during the healing of the wound, will probably exclude the mass from the peritoneal cavity, just as effectually as if the edges were stitched to the wound; whilst the plan is free from the dangers incurred by leaving the remains of a suppurating cyst free in the pelvis, and those resulting from the irritation of ligatures in the pelvic cavity. Mr. Wells narrated a case of this kind in which the continued presence of the ligatures set up abscess which burst into the rectum and produced fæcal fistula.¹

The case before us was an example of complete, and, I must allow, unexpected success. I expected that when the clamp and pins had been removed, a suppurating sinus would be left proceeding from the interior of the cyst, which would

¹ 'Diseases of the Ovary,' vol. i, p. 220. 'Glasgow Medical Journ.,' February, 1868, p. 381.

only gradually dry up, if at all. Such a result, however, would not be inconsistent with good health and activity. But as three months have passed away since the operation,* and the cicatrix is quite sound and free from irritation, with no perceptible swelling beneath it, I hope I am justified in regarding my patient's recovery as permanent.

* This patient has now (Oct., 1872) been under observation nearly a year and remains well.